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EXAMINER

NEGRON, DANIEL L

ART UNIT	PAPER NUMBER
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2627

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/774,201

Applicant(s)

SUZUKI ET AL.

Examiner

Daniell L. Negrón

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishijima et al U.S. Patent No. 6,263,151 in view of Ozue et al U.S. Patent Application Publication No. 2004/0021982.

Regarding claim 1, Nishijima et al disclose a magnetic recording head for a helical scan type magnetic recording/reproducing apparatus comprising a multi-gap recording head having "n" gaps, where "n" is an integer greater than 2 (Fig. 1), wherein the "n" recording gaps are wider than a track pitch (column 2, lines 11-14) and partially overlap each other in a pitched manner along a width direction of the recording head (see Fig. 3, where elements 3 and 6 partially overlap in a width direction) so as to record a pattern of juxtaposed tracks (see Figs 3 and 4), and a gap for recording the last track among "n" recording gaps of the multi-gap recording head being wider than other gaps (Fig. 2). Furthermore, in Figure 2, Nishijima et al show standard play video head (3) as a gap to record the last track among "n" gaps. Nishijima et al fails to explicitly disclose the recording head as being formed by laminating.

However, Ozue et al discloses a magnetic recording head formed by laminating for the purpose of multi-channeling and for effectively processing narrower tracks (paragraphs 9 and 10).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form a magnetic recording head disclosed by Nishijima et al by way of lamination as shown by Ozue et al since doing so would allow for narrower tracks on a recording medium and higher track density.

Regarding claim 2, Nishijima et al disclose a rotary drum unit (1) for a helical scan type magnetic recording/reproducing apparatus comprising a recording/reproducing head and a unit for transmitting recording and reproduced signals (see Figs 6 and 9, and disclosure thereof), the recording head comprises a multi-gap recording head having "n" recording gaps that are wider than a track pitch (column 2, lines 11-14) and partially overlap each other in a pitched manner along a width direction of the recording head (see Fig. 3, where elements 3 and 6 partially overlap in a width direction) so as to record a pattern of juxtaposed tracks (see Figs. 3 and 4), where "n" is an integer greater than 2, and a gap for recording the last track among "n" recording gaps of the multi-gap recording head being wider gap than other gaps (Fig. 2). Furthermore, in Figure 2, Nishijima et al show standard play video head (3) has as a gap to record the last track among "n" gaps. Nishijima et al fails to explicitly disclose the recording head as being formed by laminating.

However, Ozue et al discloses a recording head formed by laminating for the purpose of multi-channeling and for effectively processing narrower tracks (paragraphs 9 and 10).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form a rotary drum unit comprising a magnetic recording head disclosed by Nishijima et al by way of lamination as shown by Ozue et al since doing so would allow for narrower tracks on a recording medium and higher track density.

Regarding claim 3, Nishijima et al as modified by Ozue et al disclose a rotary drum unit comprising all the limitations of claim 2 as discussed above. Nishijima et al further disclose a rotary drum unit wherein two multi-gap reproducing heads each having "n" gaps are arranged at an angle of 180 degrees to each other (column 5, lines 51-55).

Regarding claim 4, Nishijima et al as modified by Ozue et al disclose a rotary drum unit comprising all the limitations of claim 2 as discussed above. Nishijima et al further disclose a rotary drum unit wherein a multi-gap reproducing head having "2n" gaps is arranged at an angle of 180 degrees to the multi-gap recording head (see Fig. 1 and column 5, lines 51-55).

Regarding claims 5 and 6, the rejections applied to claims 5 and 6 in the previous Office action mailed June 25, 2007 are herein repeated for the same reasons (see Response to Arguments).

Regarding claim 7, Nishijima et al disclose a magnetic recording method for a helical scan type magnetic recording/reproducing apparatus, wherein the apparatus includes a multi-gap recording head having "n" recording gaps, where "n" is an integer greater than 2, that are wider than a track pitch and partially overlap each other in a pitched manner along a width direction of the recording head (see Fig. 3, where elements 3 and 6 partially overlap in a width direction and column 2, lines 11-14) so as to record a pattern of juxtaposed tracks (see Figs. 3 and 4) and a gap for recording the last one of the tracks among "n" gaps of multi-gap recording head being a wider recording gap than other gaps (Fig. 2). Furthermore, in Figure 2, Nishijima et al show standard play video head (3) has as a gap to record the last track among "n" gaps, the method comprising the steps of recording the tracks by determining a tape running speed such that a minimum recorded track width can be ensured when the multi-gap recording head overwrites

after one rotation of recording completed by the gap (column 6, lines 47-67). Nishijima et al fails to explicitly disclose the recording head as being formed by laminating.

However, Ozue et al discloses a magnetic recording head formed by laminating for the purpose of multi-channeling and for effectively processing narrower tracks (paragraphs 9 and 10).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form a magnetic recording head disclosed by Nishijima et al by way of lamination as shown by Ozue et al since doing so would allow for narrower tracks on a recording medium and higher track density.

Regarding claim 8, Nishijima et al as modified by Ozue et al disclose a magnetic recording method comprising all the limitations of claim 7 as discussed above. Nishijima et al further disclose a magnetic recording method in which signals are reproduced by a multi-gap reproducing head having a head width which is $\frac{1}{2}$ of a track width or less (column 6, lines 50-51), wherein two multi-gap reproducing heads each having "n" gaps are arranged at an angle of 180 degrees to each other on a rotary drum (Fig. 1) as the multi-gap head, and the two multi-gap reproducing heads are switched on the rotary drum to transmit reproduced signals therefrom via a rotary transformer having "n" recording channels and "n" reproducing channels (see Figs. 9 and 15 and disclosure thereof).

Regarding claims 9, 13, and 14, claims have limitations similar to those treated in the above rejections, and are met by the references as discussed above.

Regarding claims 10-12, 15, and 16, method claims 10-12, 15, and 16 are drawn to the method of using the corresponding apparatus claimed in claims 1, 2, 5, and 6. Therefore method

claims 10-12, 15, and 16 correspond to apparatus claims 1, 5, and 6 and are rejected for the same reasons of obviousness as used above.

Response to Arguments

3. Applicant's arguments filed September 24, 2007 have been fully considered but they are not persuasive. Regarding claims 1, 2, 7, and 12, on pages 7 and 8, Applicant argues that Nishijima et al fail to disclose or suggest recording gaps which overlap each other in a pitched manner. However, Examiner respectfully disagrees since Nishijima et al shows in Fig. 3, two gaps (3 and 6) that are pitched and partially overlap each other in a width direction of the magnetic tape, as discussed in the above rejections. On pages 8 and 9, Applicant argues that Ozue et al fail to disclose a multi-gap recording head formed by laminating recording heads. However, Examiner respectfully disagrees since Ozue et al is introduced in order to show that it would have been obvious to modify Nishijima et al with the teachings of laminating provided by Ozue et al in order to produce narrower tracks (see Ozue et al, paragraphs 9 and 10). It is noted that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Regarding claims 5, 6, 15, and 16, on page 9 Applicant argues that Nishijima et al fail to disclose or suggest that the reproducing heads have a head width which is $\frac{1}{2}$ of a track width or less. Examiner however, respectfully disagrees since Nishijima et al disclose a track width of 60um and a head width of 28um on column 6, lines 20-23. For the reasons discussed above, it is considered that the references in combination, meet the limitations of Applicant's invention as claimed.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniell L. Negrón whose telephone number is 571-272-7559. The examiner can normally be reached on Monday-Friday (8:30am-5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on 571-272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DLN/
Daniell L. Negrón
Examiner, Art Unit 2627
November 29, 2007

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/William Korzuch/
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